Optimization of System Performance Based on Communication Relationship

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Abstract

A method and apparatus for optimizing information-retrieval related system performance based on users' communication relationships. Users' interactions and relationships with each other are tracked by a 'relationship analyzer' that queries multiple heterogeneous information sources, such as e-mail logs, organization charts, calendar entries, phone logs, etc. A data structure is created for each user reflecting the intensity of communication relationship with other users, and modified over time as the data in the information sources change. A relationship group is defined based on the data structure and preference or importance ratings for each type of communication relationship that includes each user's group of highest-priority other users. A derived relationship group may also be defined based on high-priority users of a user's highest-intensity relationships. The relationship analyzer then acts as a proxy for user queries, and may modify queries and create persistent data stores or store the results of queries or sub-queries in order to improve system performance in a variety of ways: for example, to shorten retrieval time, to resolve missing or ambiguous results, to prioritize information for downloading to limited-resource computing devices, or to propagate updated information among closely related users. A way to derive a relationship group based on subject lines of communications, or other text-based content of communication-related information, is also described.

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